Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D. C. 20554

In the Matter of	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules to Create a Low	)	ET Docket No. 02-98
Frequency allocation for the Amateur	)	RM-9404
Radio Service	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules Regarding an	)	RM-10209
Allocation of a Ban near 5 MHz for the	)	
Amateur Radio Service	)	
	)	
Amendment of Parts 2 and 97 of the	)	
Commission's Rules Concerning the	)	RM-9949
Use of the 2400-2402 MHz Band by the	)	
Amateur and Amateur-Satellite Services	)	

COMMENTS OF
PINNACLE WEST CAPITAL CORPORATION

Pinnacle West Capital Corporation (**Pinnacle West**) hereby submits its Comments on the *Notice of Proposed Rulemaking* in the above-captioned proceeding.[1]

I. INTRODUCTION

Pinnacle West is a company which has 2 wholly owned subsidiaries which are principally engaged in the energy business, including the generation,

[1] Amendment of Parts 2 and 97 of the Commission's Rules to Create a Low Frequency allocation for the Amateur Radio Service, *Notice of Proposed Rulemaking,* ET Docket No. 02-98, FCC 02-136 (released May 15, 2002) (the "Notice", "NPRM").

transmission, distribution and sale of electricity to (a) wholesale customers throughout the Western United States, and (b) to retail electric customers in the States of Arizona and California. Chief among its operating subsidiaries is Arizona Public Service Company (**APS**), a public service corporation organized and operating under the laws of the State of Arizona. APS is Arizona's largest electric utility company, serving approximately 874,537 customers in 11 out of the State's 15 counties.

Another wholly owned subsidiary of Pinnacle West is Pinnacle West Energy Corporation (**PWEC**), an Arizona corporation that is engaged in the generation and sale of wholesale electricity throughout the Western United States.

II. A Secondary Allocation for Amateur Operations in the 135.7-137.8 kHz Band Could be Detrimental to Power System Operations

Both companies rely heavily on PLC systems to ensure the safe and reliable delivery of electric service to our customers. We utilize PLC frequencies on 5,000 miles of transmission lines in the Western United States, for transfer-trip line protection devices. If falsely triggered, these devices will initiate breaker operation and may cause cascading loss of generation and power outages to our customers as well as portions of the Western United States.

APS and PWEC employ redundant power systems protection schemes, using alternate routing of communication signals, usually some combination of fiber optics, microwave and PLC to eliminate any single point of failure.

However, this configuration does not protect against an external received signal that satisfies the security logic of the PLC protection equipment causing a false trip. Interference to PLC operations could cause the system to falsely trip a relay, or it could prevent a relay from tripping when it should.

The most vulnerable PLC receivers are those using Frequency Shift Keyed (**FSK**) modulation scheme which can be "captured" by an interfering signal, possibly created by an amateur operator. An external signal appearing on the correct frequency with enough signal strength to satisfy the receiver's security, could be generated by amateur operators potentially located anywhere within several miles of the entire length of the PLC protected line.

The Commission has proposed in this proceeding[2] that the EIRP be limited to 1 W; that transmission bandwidth be limited to 100 Hz; and that the amateur output power be limited to 100 W PEP. However, the Commission has also declined to adopt antenna size or design limits, because it believes that the power limits alone will adequately eliminate the potential for interference to PLC operations. We believe that adopting only power limiting regulations, will not prevent interference problems with PLC systems and believe this is a general consensus of many other utilities. The placement and design of amateur operator's antenna systems can dramatically affect the potential of interference to our PLC systems. Therefore, power limits must be coupled with antenna size

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and design limits to protect PLC systems from harmful interference caused by amateur operations.

Another critical factor in allocating amateur operations in the PLC frequency band, is that under the current proposal by the Commission, utilities utilizing unlicensed PLC frequencies, could be required to shutdown critical PLC systems in the event we are interfering with amateur operations. This would be an untenable position for power utilities due to impact on power system reliability and the potential for long lead times to adopt alternative communications capabilities.

PLC systems are a cost effective method of protecting transmission lines from loss of generation and power outages and we do not want to be precluded in the future from choosing this inexpensive design option to ensure the reliability of our systems.

III. The Commission Should Not Provide Public Access to the PLC Database

Amateur Operators should not be given public access to the PLC database for helping them to alleviate interference with PLC systems, as the Commission has suggested. There is no way of ensuring the amateur operators would effectively utilize the data provided them. Even if the amateurs knew where the PLC transmitters were located by utilizing the database, they would not know the locations of the transmission lines carrying the signals. Also, in light of recent concerns (9/11/01 terrorist attacks) regarding the potential for deliberate acts of sabotage or damage, there is a high degree of sensitivity to this

type of data. Information gained from this database, could potentially be used to jeopardize the integrity of the critical PLC systems.

Based on these facts, public access of the PLC database to Amateur Operators would not be in the public interest.

IV. CONCLUSION

Pinnacle West Capital Corporation opposes the Commission's proposal to allocate the 135.7-137.8 kHz band for amateur operations on a secondary basis and strongly requests the Commission to decline this proposal. The potential for Amateur Operators interfering with critical PLC systems would be greatly increased in the event this band is allocated to them. Since PLC systems are operating on an unlicensed basis, we have no recourse in the event of interference into our systems if amateurs were permitted to operate on a secondary status.

If the Commission makes the decision to allocate this band to amateur operations, there must be technical rules adopted to include limits to ensure effective protection to PLC systems. Also the Commission should adopt rules to have amateurs coordinate through UTC to avoid causing harmful interference to each other since UTC is the keeper of the PLC database.

Lastly, if the Commission decides to allocate the PLC band to amateur operators as secondary status, we request the Commission to upgrade PLC users to licensed secondary status also, to ensure we have recourse in the event of interference.

Respectfully submitted,

Pinnacle West Capital Corporation
P.O. Box 53933 Mail Station: 3864
Phoenix, AZ 85072

/s/ Jeffrey M. Pell
Jeffrey M. Pell
IS Group Manager, Engineering & Construction

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